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AI-Driven Heart Disease Diagnosis

Prof. Anubha Gupta, IIIT Delhi, and Dr. Manu K. Shetty, Associate Professor at Maulana Azad Medical College, New Delhi, have won the first prize at the Lab2Market2023 event organized by INDIAai.

Published By : Dr Nivash Jeevanandam

Lab2Market is a prestigious annual event from INDIAai showcasing cutting-edge AI innovations and research, fostering a platform for AI startups and researchers to network, collaborate, and connect with investors and industry leaders.

This year's event witnessed numerous groundbreaking ideas and applications of AI across various sectors. Still, the collaborative project between Dr Shetty and Prof. Gupta stood out.

Dr Shetty and Prof. Gupta are renowned in AI and healthcare, having conducted extensive research on the subject. They believe that a combined effort between doctors and engineers can effectively address healthcare challenges and have been working together to develop practical AI solutions.

Hello!

An interpretable AI model that highlights the abnormal segments of the ECG and predicts heart diseases

Dr. Anubha Gupta and Dr. Manu Kumar Shetty

Diagnostic processes

Their winning project is an explainable AI model that diagnoses heart disease using ECG data. The model boasts an impressive 95% accuracy and offers a unique feature: it provides explanations for the decisions it makes. This ability to offer a rationale for its decisions is critical in fostering trust among doctors, who can then feel confident in incorporating the AI model into their diagnostic processes. Furthermore, by demystifying the traditionally opaque nature of AI models and shedding light on the inner workings of the decision-making process, this groundbreaking innovation transforms the AI model from a black box to a transparent and accountable tool.

This transparency in decision-making allows doctors to understand the AI's recommendations better and ensures that patients receive accurate diagnoses based on reliable data. The explainable AI model not only promotes the responsible use of AI in healthcare but also encourages further collaboration between medical professionals and AI researchers, paving the way for a new era of innovative and trustworthy AI-driven medical solutions.

ECG devices

The innovative AI model has the potential to revolutionize healthcare in areas where trained cardiologists are scarce, such as Primary Health Centers (PHCs) and Community Health Centers (CHCs). ECG is one of the most important screening tools for heart disease, and early diagnosis is crucial for effective treatment and management. By integrating this AI model into existing ECG devices, healthcare professionals at PHCs and CHCs can rely on accurate diagnoses and save precious time in critical situations. Furthermore, with prompt diagnosis using the AI model, doctors at PHCs and CHCs can quickly refer patients to appropriate tertiary care centres for specialized treatment without delay, significantly improving the chances of successful outcomes and saving lives.

Conclusion

Dr Shetty and Prof. Gupta emphasize that for AI models to be effectively utilized in healthcare, they must be able to provide a clear rationale for their decisions. This transparency not only develops trust among medical professionals but also ensures that patients receive the highest standard of care. In addition, this initiative demonstrates the effectiveness of interdisciplinary teamwork in tackling real-world problems. It will also play an essential role in influencing the future of healthcare, making it more accessible, efficient, and reliable for everybody.

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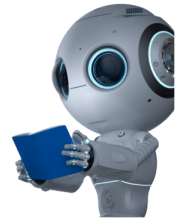
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